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IN THE CLAIMS

Please amend the claims as follows:

1. (PREVIOUSLY PRESENTED) A hydrogen storage alloy having a $CaCu_5$ crystal structure, said alloy comprising a lanthanide element, Ni and Co, the concentration of Co not exceeding 9 at. %, said alloy having a half-cell capacity of at least 100 mAh/g and a maximum concentration difference of less than 0.25 wt. % absorbed hydrogen.

2. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy comprises a mischmetal, said mischmetal including said lanthanide element.

3. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said further comprises a cycle life enhancement element, said cycle life enhancement element being selected from the group consisting of Zr, Sc, Ca, Mg, Ti, V, Cr, and Si.

4. (PREVIOUSLY PRESENTED) The alloy of claim 3, wherein said cycle life enhancement element is Zr or Si.

5. (PREVIOUSLY PRESENTED) The alloy of claim 3, wherein the concentration of said cycle life enhancement element is between 0.2 and 1.7 at. %.

6. (PREVIOUSLY PRESENTED) The alloy of claim 3, wherein the concentration of

said cycle life enhancement element is between 0.2 and 1.1 at. %.

7. (PREVIOUSLY PRESENTED) The alloy of claim 3, wherein the concentration of said cycle life enhancement element is between 0.5 and 1.1 at. %.

8. (PREVIOUSLY PRESENTED) The alloy of claim 3, wherein said alloy further comprises Cu.

9. (PREVIOUSLY PRESENTED) The alloy of claim 8, wherein the concentration of Cu is at least 1.5 at. %.

10. (PREVIOUSLY PRESENTED) The alloy of claim 8, wherein the concentration of Cu is at least 3 at. %.

11. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy further comprises Mn.

12. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy further comprises Al.

13. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein the concentration of Co does not exceed 7 at. %.

14. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein the concentration of Co does not exceed 5 at. %.

15. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein the concentration of Co does not exceed 3 at. %.

16. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a maximum concentration difference of less than 0.20 wt. % absorbed hydrogen.

17. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a maximum concentration difference of less than 0.15 wt. % absorbed hydrogen.

18. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a maximum concentration difference of less than 0.10 wt. % absorbed hydrogen.

19. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a half-cell capacity of at least 200 mAh/g.

20. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a half-cell capacity of at least 300 mAh/g.

21. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a magnetic susceptibility of at least 250 memu/g.

22. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a magnetic susceptibility of at least 400 memu/g.

23. (PREVIOUSLY PRESENTED) The alloy of claim 1, wherein said alloy has a magnetic susceptibility of at least 525 memu/g.

24. (PREVIOUSLY PRESENTED) A hydrogen storage alloy having a $CaCu_5$ crystal structure, said alloy comprising a lanthanide element, Ni, Cu and Co, said alloy having a Cu concentration of at least 1.5 at. %, said alloy having a concentration of Co not exceeding 9 at. %, said alloy having a half-cell capacity of at least 100 mAh/g and a maximum concentration difference of less than 0.25 wt. % absorbed hydrogen.

25. (PREVIOUSLY PRESENTED) The alloy of claim 24, wherein said alloy further comprises Zr or Si.

26. (PREVIOUSLY PRESENTED) The alloy of claim 24, wherein said alloy has a half-cell capacity of at least 200 mAh/g.

27. (PREVIOUSLY PRESENTED) The alloy of claim 24, wherein said alloy has a half-cell capacity of at least 300 mAh/g.

28. (PREVIOUSLY PRESENTED) A hydrogen storage alloy having a $CaCu_5$ crystal

structure, said alloy comprising a lanthanide element, Ni and Co, the concentration of Co not exceeding 9 at. %, said alloy having a maximum concentration difference of less than 0.25 wt. % absorbed hydrogen and a magnetic susceptibility of at least 250 memu/g.

29. (PREVIOUSLY PRESENTED) The alloy of claim 28, wherein said magnetic susceptibility is at least 400 memu/g.

30. (PREVIOUSLY PRESENTED) The alloy of claim 28, wherein said magnetic susceptibility is at least 525 memu/g.

31. (PREVIOUSLY PRESENTED) The alloy of claim 28, wherein said alloy further comprises Cu.

32. (PREVIOUSLY PRESENTED) The alloy of claim 31, wherein said alloy further comprises Zr or Si.

33. (PREVIOUSLY PRESENTED) A hydrogen storage alloy having a bulk region and an interface region, said interface region comprising catalytic metallic particles supported by a support matrix and voids, said catalytic metallic particles having diameters of less than about 100 Å, said catalytic metallic particles and said voids being distributed throughout said interface region, the volume fraction of said voids in said interface region being greater than 5%, said alloy having a half-cell capacity of at least

100 mAh/g and a maximum concentration difference of less than 0.25 wt. % absorbed hydrogen.

34. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said alloy comprises La, Ni, Co, and Cu.

35. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 34, wherein said alloy further comprises Zr or Si.

36. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said interface region includes an oxygen concentration of at least 10%.

37. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said catalytic metallic particles comprise nickel.

38. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said catalytic metallic particles have diameters of less than 50 Å.

39. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein the volume fraction of said catalytic metallic particles in said interface region is greater than 30%.

40. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein

the volume fraction of said catalytic metallic particles in said interface region is greater than 50%.

41. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said catalytic metallic particles vary in proximity from 50-100 Å in said interface region.

42. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said volume fraction of said voids in said interface region is greater than 10%.

43. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said volume fraction of said voids in said interface region is greater than 20%.

44. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said voids are channels.

45. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 44, wherein said channels have a cross-sectional dimension of 10-20 Å.

46. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 44, wherein said channels have a longitudinal dimension of greater than about 20 Å.

47. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said bulk region has a $CaCu_5$ crystal structure.

48. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said alloy has a half-cell capacity of at least 200 mAh/g.

49. (PREVIOUSLY PRESENTED) The hydrogen storage alloy of claim 33, wherein said alloy has a half-cell capacity of at least 300 mAh/g.